

OCT 11 2006

AMENDMENT
October 11, 2006YOR920030605US1
Serial No. 10/824,297

REMARKS

Claims 1, 3 - 7, 9 - 11, 32 - 47 and 49 - 51 remain in the application. Claims 1, 3 - 7, 9 - 11, 37 - 42, 47, 50 and 51 stand rejected. Claims 32 - 36, 43 - 46, 48 and 49 are objected to, but are indicated to encompass patentable subject matter. Claims 2, 8 and 12 - 31 are previously canceled (claims 12 - 31 without prejudice as being drawn to a non-elected invention). Claim 48 is canceled herein and claim 47 is amended to include the recitations of canceled objected to canceled claim 48. Claim 37 is amended herein. The rejection of claims 1, 3 - 7, 9 - 11, 37 - 42, 47, 50 and 51 is respectfully traversed.

Claim 37 is amended typographically. No new matter is added.

Claims 32 - 36, 43 - 46, 48 and 49 are objected to for depending from rejected base claims, but are indicated to be allowable, if rewritten in independent form. Responsive thereto, claim 47 is amended to include the recitations of canceled objected to canceled claim 48 and so, is objected to claim 48 rewritten in independent form. Therefore, claim 47 is allowable as amended. Also, claim 49 is amended to depend from claim 47. Since all claims depending from claim 48 (now 47) are allowable, claims 50 and 51 also are allowable. Reconsideration and withdrawal of the objection to claims 47 (canceled claim 48) and 49, the rejection of claims 50 and 51 and allowance of claims 47 and 49 - 51 is respectfully requested.

Claims 1, 3 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. patent No. 6,567,763 to Javanifard et al. in view of newly cited U.S. patent No. 6,612,738 to Beer et al. Claims 6, 7, 10, 11, 37 - 42, 47, 50 and 51 are rejected under 35 U.S.C. §103(a) as being unpatentable over Javanifard et al. and Beer et al. in further view of U.S. patent No. 6,496,056 to Shoji, U.S. patent No. 6,441,679 to Ohshima or published U.S. patent application No. 2003/0025514 to Benes. The rejection is respectfully traversed.

AMENDMENT
October 11, 2006

YOR920030605US1
Serial No. 10/824,297

Neither Javanifard et al. nor Beer et al. teaches selectively shunting current from a constant current source substantially as recited in claims 1, 3 and 5. Therefore, the combination does not result in the present invention as recited in claims 1, 3 and 5. The Office action acknowledges that Javanifard et al. fails to describe "the switch/clamp selectively shunt[ing] the constant current, as stated in claim 1," i.e., as previously noted, none of the switches 225, 235 or 245 are described shunting current from any of the Javanifard et al. constant current sources A230 or A240. Thus, Beer et al. is relied upon to teach "a switch 17 [that] is a shunting clamp, which connects lines 11 and 13 or connects lines 11 and 20, i.e., shunting constant current off the line 11-13." (emphasis added). Further, in responding to arguments in the applicants prior response, it is asserted that "any switch, in a broad sense can be considered a shunt because in one position it shorts circuited [sic] in another position it opens circuit [sic]." However, inclusion of a switch alone, does not a shunt make.

Claim 1 recites an "integrated circuit (IC)" that includes a "switchable current source" with "a constant current source, and a clamping device selectively shunting current from [the] constant current source" at lines 5 – 8. *See also*, claim 38, lines 4 – 6. According to Wikipedia (en.wikipedia.org) "[i]n electronics, a shunt is a device which allows electrical current to pass around another point in the circuit." While Wikipedia is not a sanctioned encyclopedia, it does indicate what those skilled and unskilled in the art understand to be the meaning of words and, in this instance, provides a reasonably good definition of "shunt" in the general field of electronics. Thus, applying this meaning of shunt, the recited "clamping device selectively [passes] current from [the] constant current source" elsewhere. Or as described in the present application, "[d]uring normal operation, clamping NFET 104 is switched on, shunting the current from current source 108 and clamping the body 106 of inverter NFET 102N, more or less, to ground." Page 5, lines 23 – 25. Thus, during normal circuit operation, the clamping device shunts the current away from the diode, allowing the constant current source to continue supplying current without the diode being affected by the current. So, with the switch (NFET 104)

AMENDMENT
October 11, 2006

YOR920030605US1
Serial No. 10/824,297

closed, no current passes to and through the diode 106; and, with the switch (NFET 104) open, current passes to the diode 106 and a diode voltage develops that may be measured and monitored.

Beer et al. teaches an IC with an on-chip structure for a four point measurement for determining chip temperature. *See, e.g.*, col. 3, lines 6 – 15. During test, an external current source 31 is connected to two of the four points (pin 11 and ground) and voltage is measured across the other two (pins 12 and 18). For temperature measurements the current passes through a diode 14 and the diode voltage is measured. *Id.*, lines 26 – 43. During test, switches 17 and 18 are closed to connect the test circuit to pads 11 and 12, thereby connecting current source 31 and high impedance voltage meter 30. Otherwise, switches 17 and 18 are open, isolating the test circuit. *Id.* Specifically, “[i]n order to feed in the measuring current and to measure the voltage value by an external test configuration for determining the chip temperature during active operation, the temperature measuring configuration of the chip is first activated.” *Id.*, lines 30 – 35. So, regardless of whether Beer et al. teaches “a constant current source, and a clamping device selectively shunting current from [the] constant current source,” the Beer et al. IC certainly does not include the current source 31.

Furthermore, Beer et al. teaches measuring the voltage across the diode 14 in IC 32 with switches 17, 18 closed, i.e. conducting current. Figure 4 shows a test configuration with the current source applied to pin 11 and the high impedance voltage meter 30 connected to pin 12. Col. 6, lines 29 – 33 and 65 – 67. During test, switch 17 connects the diode 14 between the external current source 31 connected to pin 11 and ground; and simultaneously, switches 18 separately connect the diode 14 to high impedance voltage meter 30 connected to pins 12. Col. 7, lines 6 – 17. Beer et al. shows “an address line 20 connected to the pin 11...” col. 7, lines 34 – 35. Thus, pins 11 and 12 are shared for both connecting the current source 31 and high impedance voltage meter 30 to the diode 14 through closed switches 17 and 18 in a test configuration; and as

AMENDMENT
October 11, 2006

YOR920030605US1
Serial No. 10/824,297

Input/Output pins for address lines 20 and I/O lines 21 under normal chip operation with switches 17 and 18 open. *See, e.g.*, col. 3, lines 44 – 54. However, regardless of whether Beer et al. switch 17 is closed connecting both pin 11 and address line 20 to the connecting line 13; or open with no connection between the connecting line 13 and both pin 11 and address line 20; Beer et al. switch 17 is not diverting current from the constant current source and, therefore, not shunting current. Therefore, the Beer et al. series connected switch 17 is not a shunting clamp and, certainly Beer et al. fails to teach or suggest “a constant current source, and a clamping device selectively shunting current from [the] constant current source” as claims 1 and 38 recite. And as previously noted, neither is this taught or suggested by Javanifard et al.

It is not at all clear to the applicants, if one were to include an on-chip current source as disclosed in of Javanifard et al. with the Beer et al. test circuit, where it would be included in the test circuit (between the pin 11 and switch 17?) or why one would need to connect the switch 17 to pin 11 to share that I/O pin with address line 20. Therefore, the combination of Javanifard et al. with Beer et al. is not suggested by any reference of record and does not result in the present invention as recited in claim 1. Neither does Benes add anything that is missing from either of Javanifard et al. or Beer et al., to result in the present invention as recited in claim 1, much less 38. Reconsideration and withdrawal of the rejection of claims 1 and 38 under 35 U.S.C. §103(a) is respectfully requested.

Neither do any of Shoji or Ohshima add anything that is missing from either of Javanifard et al., Beer et al., or Benes to result in the present invention as recited in claims 1 or 38. Therefore, since dependent claims include all of the differences with the references as the claims from which they depend, the present invention as recited in claims 3 – 7, 9 – 11, 37 and 39 – 42, which depend from claims 1 and 38, are patentable over Javanifard et al. and Beer et al., alone, or further in combination with Benes, Shoji

AMENDMENT
October 11, 2006

YOR920030605US1
Serial No. 10/824,297

and/or Ohshima. Reconsideration and withdrawal of the rejection of claims 3 - 7, 9 - 11, 37 and 39 - 42 under 35 U.S.C. §103(a) is respectfully requested.

The applicants have reviewed the references cited, but not relied upon in the rejection and find them to be no more relevant than the reference upon which the rejection is based.

The applicants thank the Examiner for efforts, both past and present, in examining the application. Believing the application to be in condition for allowance, both for the amendment to the claims and for the reasons set forth above, the applicants respectfully request that the Examiner reconsider and withdraw the objection to claims 32 - 36, 43 - 46 and 49, and the rejection of claims 1, 3 - 7, 9 - 11, 37 - 42, 47, 50 and 51 under 35 U.S.C. §103(a), and allow the application to issue.

Should the Examiner believe anything further may be required, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below for a telephonic or personal interview to discuss any other changes.

Please charge any deficiencies in fees and credit any overpayment of fees to IBM Corporation Deposit Account No. 50-0510 and advise us accordingly.

Respectfully Submitted,

October 11, 2006

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